

What is claimed is:

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1. A method of driving an EL display device in which a plurality of pixels, each having a first TFT, a second TFT, a third TFT, and an organic EL element, are formed, wherein:
- 5         $n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear in one frame period;
- the  $n + m$  display periods each correspond to one bit of a digital video signal among  $n$  bits of the digital video signal;
- 10        a plurality of display periods, among the  $n + m$  display periods, correspond to the same bit of the digital video signal;
- other display periods corresponding to other bits of the digital video signal, among the  $n + m$  display periods, appear between the plurality of display periods;
- 15        for each of the  $n + m$  display periods, the corresponding bit of the digital video signal is input to a gate electrode of the second TFT by the first TFT turning on, and the respective display periods begin by the third TFT turning off.
- after each of the  $n + m$  display periods begins, the respective display periods are completed by the beginning of another display period, or by the third TFT
- 20        turning on; and
- the organic EL element emits light when the second TFT is turned on, and does not emit light when the second TFT is turned off.

2. A method according to claim 1, wherein the first TFT and the second TFT have
- 25        the same polarity.

3. A method according to claim 1, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n + m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1}, Tr_n$ .

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4. A method according to claim 1, wherein the first TFT functions as a switching TFT, the second TFT functions as a EL driver TFT, and the third TFT functions as a erasing TFT.

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5. A method of driving an EL display device in which a plurality of pixels, each having a first TFT, a second TFT, a third TFT, and an organic EL element, are formed. wherein:

$n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear in one frame period;

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the  $n + m$  display periods each correspond to one bit of a digital video signal among  $n$  bits of the digital video signal;

a plurality of display periods, among the  $n + m$  display periods, correspond to the most significant bit of the digital video signal:

other display periods corresponding to other bits of the digital video signal, among the  $n + m$  display periods, appear between the plurality of display periods;

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for each of the  $n + m$  display periods, the corresponding bit of the digital video signal is input to a gate electrode of the second TFT by the first TFT turning on, and the respective display periods begin by the third TFT turning off:

after each of the  $n + m$  display periods begins, the respective display periods are completed by the beginning of another display period, or by the third TFT turning on; and

the organic EL element emits light when the second TFT is turned on, and  
5 does not emit light when the second TFT is turned off.

6. A method according to claim 5, wherein the first TFT and the second TFT have the same polarity.

10 7. A method according to claim 5, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n + m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1}, Tr_n$ .

15 8. A method according to claim 5, wherein the first TFT functions as a switching TFT, the second TFT functions as a EL driver TFT, and the third TFT functions as a erasing TFT.

20 9. A method of driving an EL display device in which a plurality of pixels, each having a first TFT, a second TFT, a third TFT, and an organic EL element, are formed, wherein:

$n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear in one frame period;

the  $n + m$  display periods each correspond to one bit of a digital video  
25 signal among  $n$  bits of the digital video signal;

upper bits of the digital video signal correspond to a plurality of display periods among the  $n + m$  display periods;

other display periods corresponding to other bits of the digital video signal, among the  $n + m$  display periods, appear between the plurality of display periods;

for each of the  $n + m$  display periods, the corresponding bit of the digital video signal is input to a gate electrode of the second TFT by the first TFT turning on, and the respective display periods begin by the third TFT turning off;

after each of the  $n + m$  display periods begins, the respective display periods are completed by the beginning of another display period, or by the third TFT turning on; and

the organic EL element emits light when the second TFT is turned on, and does not emit light when the second TFT is turned off.

10. A method according to claim 9, wherein the first TFT and the second TFT have the same polarity.

11. A method according to claim 9, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n + m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1}, Tr_n$ .

12. A method according to claim 9, wherein the first TFT functions as a switching TFT, the second TFT functions as a EL driver TFT, and the third TFT functions as a erasing TFT.

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13. A method of driving an EL display device in which a plurality of pixels, each having a first TFT, a second TFT and an organic EL element, are formed, wherein:

$n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear in one frame period;

5 the  $n + m$  display periods each correspond to one bit of a digital video signal among  $n$  bits of the digital video signal;

a plurality of display periods, among the  $n + m$  display periods, correspond to the same bit of the digital video signal;

10 other display periods corresponding to other bits of the digital video signal, among the  $n + m$  display periods, appear between the plurality of display periods;

for each of the  $n + m$  display periods, the corresponding bit of the digital video signal is input to a gate electrode of the second TFT by the first TFT turning on;

15 after each of the  $n + m$  display periods begins, the respective display periods are completed by the beginning of another display period: and

the organic EL element emits light when the second TFT is turned on, and does not emit light when the second TFT is turned off.

20 14. A method according to claim 13, wherein the first TFT and the second TFT have the same polarity.

15. A method according to claim 13, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n - m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots$   
25  $Tr_{n-1}, Tr_n$ .

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16. A method according to claim 13, wherein the first TFT functions as a switching TFT and the second TFT functions as a EL driver TFT.

17. A method of driving an EL display device in which a plurality of pixels, each  
5 having a first TFT, a second TFT, and an organic EL element, are formed, wherein:

$n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear  
in one frame period;

the  $n + m$  display periods each correspond to one bit of a digital video  
signal among  $n$  bits of the digital video signal;

10 a plurality of display periods, among the  $n + m$  display periods,  
correspond to the most significant bit of the digital video signal;

other display periods corresponding to other bits of the digital video  
signal, among the  $n + m$  display periods, appear between the plurality of display  
periods;

15 for each of the  $n + m$  display periods, the corresponding bit of the digital  
video signal is input to a gate electrode of the second TFT by the first TFT turning on;

after each of the  $n + m$  display periods begins, the respective display  
periods are completed by the beginning of another display period: and

the organic EL element emits light when the second TFT is turned on, and  
20 does not emit light when the second TFT is turned off.

18. A method according to claim 17, wherein the first TFT and the second TFT  
have the same polarity.

19. A method according to claim 17, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n + m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1}, Tr_n$ .

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20. A method according to claim 17, wherein the first TFT functions as a switching TFT and the second TFT functions as a EL driver TFT.

21. A method of driving an EL display device in which a plurality of pixels, each having a first TFT, a second TFT, and an organic EL element, are formed, wherein:

$n + m$  display periods (where  $n$  and  $m$  are both natural numbers) appear in one frame period;

the  $n + m$  display periods each correspond to one bit of a digital video signal among  $n$  bits of the digital video signal;

upper bits of the digital video signal correspond to a plurality of display periods among the  $n + m$  display periods;

other display periods corresponding to other bits of the digital video signal, among the  $n + m$  display periods, appear between the plurality of display periods;

for each of the  $n + m$  display periods, the corresponding bit of the digital video signal is input to a gate electrode of the second TFT by the first TFT turning on:

after each of the  $n + m$  display periods begins, the respective display periods are completed by the beginning of another display period: and

the organic EL element emits light when the second TFT is turned on, and does not emit light when the second TFT is turned off.

22. A method according to claim 21, wherein the first TFT and the second TFT have the same polarity.

23. A method according to claim 21, wherein  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1} = 2^0, 2^1, 2^2, \dots, 2^{n-2}, 2^{n-1}$ , where the lengths of the display periods, among the  $n + m$  display periods, corresponding to respective bits of the digital video signal are taken as  $Tr_1, Tr_2, Tr_3, \dots, Tr_{n-1}, Tr_n$ .

24. A method according to claim 21, wherein the first TFT functions as a switching TFT and the second TFT functions as a EL driver TFT.

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for a 2nd embodiment

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